

ABSTRACT

The invention concerns a cyclotron for accelerating a charged particle beam circulating in the median plane essentially in the form of two poles inducing a magnetic field and having a so-called axial injector, that is an injector arranged outside the cyclotron substantially along the main axis of the cyclotron and hence perpendicular to the median plane thereof and which is combined with deflecting means which enable the particle beam to be deflected until it is positioned in the median plane. The invention is characterized in that the deflecting means consist of a magnetic deflector.